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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/029,533	12/20/2001	Gaetano Santoruvo	01-RB-075 (850063.587)	5875

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EXAMINER

FASTOVSKY, LEONID M

ART UNIT	PAPER NUMBER
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3742

DATE MAILED: 05/15/2003

3

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/029,533

Applicant(s)

SANTORUVO ET AL.

Examiner

Leonid M Fastovsky

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 20 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2. 6) ☐ Other:

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DETAILED ACTION

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-2, 4 and 20-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Schwartz et al (4,041,276).

Schwartz et al teaches an integrated heater (Figures 1-3) comprising a semiconductor material, a transistor 2, and a fluid chamber 4 to be heated.

2. Claims 1-5, 7, 9-10, 16, 18-19, 24-26, 28-31, 34-35, and 39-43 are rejected under 35 U.S.C. 102(b) as being anticipated by Williams (5,243,212).

Williams teaches an integrated heater (claim 1) comprising a semiconductor substrate, a source region and a drain region disposed in the semiconductor substrate, a channel region disposed in the semiconductor substrate between the source and drain regions to conduct electric current between the source and drain regions, a dielectric layer disposed in the channel region, a gate electrode disposed on the dielectric layer to control the current conducted by the channel region, and a fluid chamber to be heated.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6, 11, 17, 23, 27, 32-33, and 36-38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams in view of Stumborg et al (6,211,066).

Williams discloses substantially the claimed features including an integrated heater comprising a semiconductor substrate, a source region and a drain region, a channel region, a dielectric layer, a gate electrode, and a fluid chamber to be heated, but does not disclose a thermally insulating barrier. Stumborg et al discloses a thermally insulating barrier 47 and 49 (Fig. 8). It would have obvious to one having ordinary skill in the art at the time the invention was made to use a thermally insulating barrier as taught by Stumborg et al to limit transmission in the semiconductor material of the heat generated by the transistor.

5. Claims 8 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Williams in view of Ferla et al (5,883,412).

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Williams discloses substantially the claimed features including an integrated heater comprising, a semiconductor substrate, source, drain, and channel regions, a dielectric layer, a gate electrode, and a fluid chamber, but does not disclose a dielectric layer having a window. Ferla shows a dielectric layer 10 having windows 11. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use windows as taught by Ferla et al to receive the heat generated by the transistor.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Leonid M Fastovsky whose telephone number is 703-306-5482. The examiner can normally be reached on M-Th. 8.00 am -6.00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Teresa Walberg can be reached on 703-3081327. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9302 for regular communications and 703-872-9303 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0861.



Leonid M Fastovsky
Examiner
Art Unit 3742

lmf
May 12, 2003